REMARKS

Claim 25 has been canceled without prejudice or disclaiming the subject matter recited therein. No new issue or no new matter is raised. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Rejection of Claims 1-7, 9-11, and 22-25 Under 35 U.S.C. § 103

Claims 1-7, 9-11, and 22-25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,447,568 (Hayakawa) and US 5,785,796 (Lee) in view of US 5,953,634 (Kajita). Claim 25 has been canceled without prejudice or disclaiming the subject matter recited therein. Claim 1 is independent. Applicant respectfully traverses this rejection.

Claim 1 recites:

> "a shower plate for emitting a jet of reaction gas to said object, which is disposed parallel and opposing to said susceptor;
>
> an orifice for bringing a liquid raw material for deposition and a carrier gas into said reaction chamber, which is formed through a ceiling of said reaction chamber;
>
> an evaporation plate for vaporizing said liquid raw material, which is disposed in a space between said ceiling of said reaction chamber and said shower plate, said evaporation plate having a vaporization surface which is a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending outward toward an outer periphery of the shower plate, said vaporization surface having pores distributed exclusively in the vicinity of its outer periphery; and
>
> a temperature controller for controlling said shower plate and said evaporation plate at respective given temperatures." (emphasis added)

The Examiner admits that Hayakawa does not teach the limitations shown underlined in claim 1 above.

However, the Examiner states:

> Kajita teaches a vaporization surface upper plate (43a; Figure 6; column 27; lines 8-65) with conical surface (43a; Figure 6). Kajita further teaches an evaporation plate (43a; Figure 6; column 27; lines 8-65) having a vaporization surface (43a; Figure 6) facing the ceiling of the reaction chamber (41; Figure 6), having a center (43a) under the orifice

(43c), and extending toward a periphery of the shower plate (42; Figure 6) - claim 1 (emphasis in original) Third paragraph on page 9

Applicant respectfully traverses the above statement. The Examiner's above interpretation of Kajita is not accurate in connection to claim 1. In the above, the Examiner states: "a vaporization [conical] surface (43a; Figure 6) *** extending [outward] toward a periphery of the shower plate (42; Figure 6)." However, in Figure 6 of Kitaji, the conical surface (43a) does not extend outward toward the periphery of the shower plate (42), and on the contrary, the conical surface (43a) does extend outward away from the periphery of the shower plate (42). Clearly, the outer periphery of the conical surface (43a) is not getting closer to the periphery of the shower plate (42) when viewed from the center (43b) of the conical surface (43a). The conical surface can extend outward generally only in two directions, i.e., $\wedge$ or $\vee$. In Figure 6 of Kajita, the shower plate (42) is above the conical surface (43a), and thus, when the conical surface (43a) extends outward toward the shower plate (42), it is necessarily $\vee$, not $\wedge$. The Examiner's above interpretation of Kajita clearly exceeds the teachings of Kajita, and is unfair to Applicant.

In contrast, claim 1 specifically recites: "a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending outward toward an outer periphery of the shower plate."

Further, the Examiner states:

> Applicant believes the Examiner's statement of obviousness to optimize the dimension of Hayakawa's evaporation plate (3306, Figure 10, 11, 14; column 12, lines 3-59; column 14, lines 1-47) in the geometry taught by Kajita's vaporization surface upper plate (43a; Figure 6; column 27; lines 8-65) with conical surfaces (43a; Figure 6) 'would render the prior art invention being modified unsatisfactorily for its intended purpose'. The Examiner disagrees. In fact, Kajita's conical vaporization surface upper plate (43a; Figure 6; column 27; lines 8-65) is so formed so as to have a large surface area ("optimize the dimension") for increasing vaporization as taught by Kajita (column 26, lines 55-67). ¶6 on page 12.

Applicant respectfully traverses the above statement. The intended purpose of Hayakawa's evaporation plate (3306, Figure 10, 11, 14; column 12, lines 3-59; column 14, lines 1-47) is gas rectification. Hayakawa states: "Through-holes are further arranged for the purpose

of gas rectification. In this example, the through-holes are made to have a size distribution so that the conductance at the outskirts where the flow velocity decreases can be increased. Using this heating rectifying plate in plurality, plates having through-hole size distributions different from each other can be used so that the gas rectifying action can be improved." (emphasis added) Column 12, lines 17-25. Gas rectification is for ratifying flow velocity to uniformly discharge gas through the plate. In order to improve the gas rectifying action, though-hole size distribution can be adjusted. In Figures 10-12, Hayakawa shows the rectifying plates having different through-hole size distributions. In contrast, Kajita's evaporation plate (43a) is for evaporating liquid material. The liquid material is supplied from the center (43b) and flows on the surface of the evaporation plate (43a). There are no through-holes on the conical surface (43a) (the only hole is the center (43b)). It is clear that the conical surface of Kajita cannot substitute the rectifying plate of Hayakawa because if the conical surface of Kajita substitutes the rectifying plate of Hayakawa, no gas rectification can be achieved, frustrating the intended purpose of Hayakawa. It is well settled that if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

The Examiner states: "In fact, Kajita's conical vaporization surface upper plate (43a; Figure 6; column 27; lines 8-65) is so formed so as to have a large surface area ("optimize the dimension") for increasing vaporization as taught by Kajita (column 26, lines 55-67)." However, it is clear that a conical shape disrupts gas rectifying action, and the conical shape cannot be optimal for the purposes of gas rectification. Hayakawa does not teach or suggest anything about a conical surface as an "optimized dimension."

Further, "[t]he mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." (emphasis added.) *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

Hayakawa provides no motivation or reason to substitute a conical evaporation plate for the gas rectifying plate (3306) especially because of the fact that Hayakawa uses a liquid material evaporator (3001, Figure 10) separately from the gas ratifying plate (3306), and one of ordinary skill in the art could readily realize that a conical shape will render flow velocity uneven. Kajita provides no motivation or reason to use the conical evaporation plate (43a) on which liquid material flows for a gas rectifying plate, and one of ordinary skill in the art would not use the conical evaporation plate (43a) as a gas rectifying plate because the evaporation plate (43a) has no through-holes and has nothing to do with gas rectification. If one of ordinary skill in the art uses the evaporation plate of Kajita in Hayakawa, he or she would reasonably replace the evaporator (3001, figure 10) with the conical evaporation plate (43a) of Kajita. Without the benefit of the instant specification, neither Hayakawa nor Kajita provides a motivation or reason for one of ordinary skill in the art to replace the gas rectifying plate (3306) having through-holes distributed throughout the surface for gas rectification of Hayakawa with the conical evaporation plate (43a) having no through-hole for evaporating liquid material of Kajita. Lee's teachings are irrelevant to the conical shaped plate.

Furthermore, claim 1 recites: "said vaporization surface having pores distributed exclusively in the vicinity of its outer periphery." Applicant previously asserted that none of the prior art of record teaches or even suggests a vaporization surface having pores distributed exclusively in the vicinity of its outer periphery. However, the Examiner is silent as to this particular feature.

> The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal. *M.P.E.P. §706.07* (emphasis added).

A clear issue for appeal has not been developed because Applicant has not been informed of the USPTO's position on the particular feature. In order to fully develop the issues for appeal, Applicant respectfully requests that either the finality of the present Action be removed, or that the present Action be vacated and a new Office Action be issued which considers and addresses all issues raised by Applicant in the previous Response.

Hayakawa's gas rectifying plate, even though the through-hole size distributions are different where the flow velocity decreases (col. 12, lines 20-21), has through-holes distributed

substantially evenly for the purpose of gas rectification as shown in Figures 11, 12, and 14, for example. In particular, if a conical shape is used as the gas rectifying plate, the flow velocity is unlikely to decrease in the vicinity of the outer periphery of the conical shape, and further, there is no reason or motivation to entirely close all other through-holes. Kajita and Lee are irrelevant to the above feature recited in claim 1. "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co., Id.*

In view of the foregoing, not all of the limitations of claim1 are taught by Hayakawa, Lee, and Kajita, and thus claim 1 cannot be *prima facie* obvious over Hayakawa, Lee, and Kajita, alone or combined. At least for this reason, the remaining dependent claims also cannot be *prima facie* obvious over the above references. Applicant respectfully requests withdrawal of this rejection.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 15, 2006 By: 

Katsuhiro Arai
Registration No. 43,315
Attorney of Record
Customer No. 20,995
(949) 760-0404

3212797
121406